Remarks

With this response, Claims 33-42 and 52-63 are pending. Claims 31-32 and 43-51 have been cancelled and Claims 33-37 and 40-42 have been amended without prejudice or disclaimer of the underlying subject matter. Claims 52-63 have been added. No new matter enters by way of these amendments. Support for the amended claims can be found throughout the specification and original claims.

I. Objection to the Claims and Indication of Allowable Subject Matter

The Examiner is thanked for the indication that dependent claims 41 and 42 would be allowable if rewritten in independent form including all of the limitations of the base claims. Claims 41 and 42, as well as new claims 52 and 53, have been written as independent claims, and as such are believed to be in condition for allowance.

II. Objections under 37 C.F.R. § 1.75

With regard to Item 4, claims 33 and 34 stand objected to under 37 C.F.R. § 1.75 as being substantially duplicates of claims 31 and 32, respectively. While not agreeing with the Examiner's allegation, to facilitate prosecution, claims 31 and 32 have been cancelled. As such, withdrawal of this objection is respectfully requested.

III. Rejection under 35 U.S.C. § 112, Second Paragraph

With regard to Item 6(A), claim 40 stands rejected under 35 U.S.C. § 112, second paragraph, as allegedly being unclear with regard to how claim 40 further limits the scope of former claims 31-34. Applicants have amended claim 40 in accordance with the Examiner's suggestion. However, it is not believed that such amendment narrows the claim of the claim in the context of the present invention. As such, withdrawal of this rejection is respectfully requested.

With regard to Item 6(B), claims 44 to 46 stand rejected as allegedly unclear in the recitation of "activity of the exendin of which it is an analog or derivative." The Examiner alleges that "[i]t is unclear if the 'activity' referred to is the reduction of gastric motility and the delaying of gastric emptying, or if the 'activity' refers to another activity attributable to the exendins, such as the ability to stimulate rat pancreatic adenylate

cyclase activity." Paper No. 43 at page 3. Applicants respectfully disagree. However, to facilitate prosecution, Applicants have cancelled claims 44 and 46 without prejudice or disclaimer. As such, withdrawal of this rejection is respectfully requested.

IV. Rejection under 35 U.S.C. § 112, First Paragraph

Claims 31-40 and 43-51 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The rejections are at least partly based on the Examiner's concern about the scope of the terms of exendins and exendin agonists. This rejection is respectfully traversed for at least the reasons which follow.

Item 7(A) concerns the alleged lack of written description for the genus of exendins. The Examiner alleges that the written description requirement was not met because the specification does not disclose the structural and functional attributes that define the genus of exendins. Applicants respectfully disagree.

The standard for determining whether a claim drawn to a genus meets the written description requirement is clear. "The written description requirement for a claimed genus may be satisfied through sufficient description of a representative number of species by actual reduction to practice . . . , reduction to drawings . . . , or by disclosure of relevant, identifying characteristics, i.e., structure or other physical and/or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such identifying characteristics, sufficient to show the applicant was in possession of the claimed genus." *See Eli Lilly*, 119 F.3d at 1568, 43 USPQ2d at 1406; M.P.E.P § 2163(II)(3)(a)(ii) (emphasis added). A "representative number of species" means that the species which are adequately described are representative of the entire genus. What constitutes a "representative number " is an inverse function of the skill and knowledge in the art. Description of a representative number of species does not require the description to be of such specificity that it would provide individual support for each species that the genus embraces. *Id.*

It is clear that recitation of the definitive structural and/or functional attributes of the genus is merely one of the many alternatives to meet the written description requirement, another alternative being the description of a representative number of species by actual reduction to practice. Applicants have satisfied the written description requirement by describing a representative number of exendins, *i.e.*, exendin-3 and exendin-4, that have been actually reduced to practice. Two other members of the exendin genus, helospectin (exendin-1) and helodermin (exendin-2) are well known in the art. *See, e.g.,* Eng et al., J. Biol. Chem. 265:20259-20262 (1990). Moreover, as is known in the art, the members of the exendin peptide family are structurally related by having an amino-terminal histidine residue and a pehnylalanine residue at position 6 (His^1-Phe^6), or one of several variant structures such as Tyr^1-Phe^6, His^1-Tyr^6, or His^1-Leu^6. *See id.* Exendin-1, Exendin-2, Exendin-3, and Exendin-4 each share the common His^1-Phe^6 structural attribute. The law does not require individual support for each species that the genus embraces. Applicants respectfully submit that one skilled in the art would readily appreciate that Applicants, at the time of the filing of the present application, were in possession of the claimed genus and, therefore, have met the written description requirement. As such, it is submitted that the amended claims comply with 35 U.S.C. §112, first paragraph, and withdrawal of this rejection is respectfully requested.

Item 7(B) concerns the alleged lack of written description of the genus of exendin agonists. The Examiner asserts that members of the exendin genus bind to may receptors and that the "genus of 'exendin agonists' encompasses molecules which can antagonize any of the peptides or proteins included in the 'exendin' family at any receptor to which said exendins bind." Paper No. 43 at page 4. While not agreeing with the Examiner's allegations, Applicants have amended the claims without prejudice or disclaimer to delete reference to "exendin agonist." As such, this rejection is now moot.

In sum, it is submitted that the amended claims comply with 35 U.S.C. §112, first paragraph, and withdrawal of this rejection is respectfully requested.

V. Rejections under 35 U.S.C. § 102

a. Strandberg, Kolterman, and Johnson

In Item 8, Claims 31-34, 37, 38, 40, 43-46 and 51 stand rejected under 35 U.S.C. § 102(b) as alleged being anticipated by Strandberg (Acta Radiologica, 1988, Vol. 29, pp. 49-52). In Item 9, Claims 31-34, 37-40, 43-46 and 51 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Kolterman (WO 95/07098). In Item 11, Claims 31-34, 43-47 and 51 stand rejected under 35 U.S.C. § 102(a) as being anticipated by Johnson (WO 96/06628) as evidenced by Holst (Gastroenterology, 1994, Vol. 107, pp. 1848-1855), Phillips (U.S. Patent No. 5,187,154), and Raufman (Journal of Biological Chemistry, 1992, Vol. 267, pp. 21432-21437). These rejections are at least partly premised on the Examiner's assertion that glucagon, GLP-1, and amylin are exendin agonists, analogs, or derivatives. Applicants respectfully traverse the rejections for at least the reasons that follow.

Applicants respectfully submit that the specification clearly establishes that glucagon, GLP-1, and amylin are not exendins or exendin analogs according to the claimed invention. Notably, the specification clearly refers to glucagon, GLP-1, and amylin as distinct from exendins (see the Background section of the specification, pages 1-5). It is also well know in the relevant art that glucagon, GLP-1, and amylin belong to genuses distinct from the exendin genus and would not be contemplated as exendin analogs as defined in the present invention. Moreover, the general knowledge in the relevant art is that glucagon, GLP-1, and amylin belong to peptide families distinct from exendins and which are encoded by different genes. *See, e.g.*, Chen & Drucker, J. Biol. Chem. 272:4108-4115 (1997); Pohl & Wank, J. Biol. Chem. 273:9778-9784 (1998). As such, it is submitted that glucagon, GLP-1, and amylin are not exendin analogs within the context of the relevant art.

Nonetheless, in order to facilitate prosecution, the claims have been amended without prejudice or disclaimer to refer to exendins, specific exendin analogs, and exendin-4 specifically. As such, withdrawal of this rejection is respectfully requested.

b. Eng

In Item 10, Claims 31-36, 40, and 43-50 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Eng (U.S. Patent No. 5,424,286) as evidenced by Phillips (U.S. Patent No. 5,187,154). Eng teaches a method of treating diabetes in diabetic subjects using exendin-3 or exendin-4. The Examiner acknowledges that "Eng does not specifically address the inhibition of gastric motility or the delay of gastric emptying" in subjects. Paper No. 43 at page 7-8. However, the Examiner alleges that "the administration of exendin-3 and exendin-4 would inherently cause said inhibition of gastric motility and delaying of gastric emptying." Paper No. 43 at page 8 (emphasis added). Applicants respectfully disagree.

Anticipation requires that a single prior art reference disclose each and every limitation of the claimed invention. *Lewmar Marine, Inc. v. Barient, Inc.*, 827 F.2d 744, 747 (Fed. Cir. 1987). However, a prior art reference may anticipate a claim without expressly disclosing a feature of the claimed invention if that missing feature is necessarily present, or inherent, in the single anticipating reference. *Continental Can Co. v. Monsanto Co.*, 948 F.2d 1264, 1268 (Fed. Cir. 1991). In this regard, "the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990); M.P.E.P. § 2112 (emphasis in original); see also *In re Cruciferous Sprout Litig.*, 301 F.3d 1343, 1351 (Fed. Cir. 2002).

In support of this rejection, the Examiner asserts that:

> Phillips et al disclose that certain diabetic patients, such as those in the early stages of diabetes or those having non-insulin dependent diabetes exhibit rapid gastric emptying. It would be expected that the individuals treated by Eng et al would encompass individual having non-insulin dependent diabetes and the early stages of diabetes (column 2, lines 34-40 [of Phillips]), and therefore said patients would comprise gastric motility associated with a gastrointestinal disorder, thus fulfilling the specific embodiments of claim 40.

However, Phillips nowhere mentions exendins. Rather, Phillips discusses the use of compounds known at the time to be gastric emptying inhibiting substances, such as

CCK. Phillips does not teach or suggest that all anti-diabetic agents are necessarily gastric emptying inhibiting substances, much less that exendins have the ability to reduce gastric motility or delay gastric emptying. In fact, Phillips contemplates the combined therapeutic use of an anti-diabetic agent, *e.g.*, insulin, together with gastric emptying inhibitory substances, thereby indicating that anti-diabetic agents are not necessarily gastric emptying inhibitory substances. Therefore, it is submitted that the teachings of Eng, even in view of Phillips, would not establish that a reduction in gastric motility or delay in gastric emptying "is a necessary consequence of what was deliberately intended" by the methods of Eng. *Mehl/Biophile Int'l Corp. v. Milgraum*, 192 F.3d 1362, 1366 (Fed. Cir. 1999).

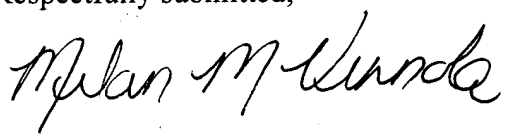
Further, the language of the claims requires that the method be performed on "a subject in need thereof" and that the method be used "for reducing gastric motility" or "for delaying gastric emptying." The claims' recitation of a subject "in need" gives life and meaning to the preambles' statement of purpose. See *Kropa v. Robie, 38 C.C.P.A. 858, 187 F.2d 150, 152, 1951 Dec. Comm'r Pat. 177 (CCPA 1951)* (stating the rule that a preamble is treated as a limitation if it gives "life and meaning" to the claim). The preamble is therefore not merely a statement of effect that may or may not be desired or appreciated. Rather, it is a statement of the intentional purpose for which the method must be performed, and is an element of the claim. As such, the prior art reference must teach an intended purpose of reducing gastric motility or delaying gastric emptying. As acknowledged by the Examiner, Eng is silent in this regard. For at least this additional reason, it is submitted that the claims are patentable over Eng.

For at least the aforementioned reasons, it is submitted that the claims are patentable over Eng, and withdrawal of this rejection is respectfully requested.

Conclusion

In view of the above, each of the presently pending claims is believed to be in immediate condition for allowance. Accordingly, the Office is respectfully requested to withdraw the outstanding objection and rejection of the claims, and to pass this application to issue. The Office is encouraged to contact the undersigned at (202) 942-6111 should any additional information be necessary for allowance.

Respectfully submitted,



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